

MAEKAWA et al
Appl. No. 10/022,801
October 28, 2003

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) Spindle-shaped magnetic alloy particles containing Fe and Co as main components, having a cobalt content of 20 to 50 atm%, calculated as Co, based on whole Fe; an average major axis diameter (L) of 0.03 to 0.10 μm ; a coercive force value of 159.2 to 238.7 kA/m (2,000 to 3,000 Oe); a crystallite size of 100 to 160 \AA ; and an activation volume (V_{act}) of 0.01 to 0.07E-4 μm^3 ; and a squareness ($\sigma_{\text{f}}/\sigma_{\text{s}}$) of 0.52 to 0.55.

2. (Original) Spindle-shaped magnetic alloy particles containing Fe and Co as main components according to claim 1, which have a cobalt content of 20 to 45 atm%, calculated as Co, based on whole Fe; an average major axis diameter (L) of 0.03 to 0.08 μm ; a coercive force value of 159.2 to 238.7 kA/m (2,000 to 3,000 Oe); a crystallite size of 110 to 160 \AA ; and an activation volume (V_{act}) of 0.015 to 0.07E-4 μm^3 .

3. (Original) Spindle-shaped magnetic alloy particles containing Fe and Co as main components according to claim 1, which further have an average minor axis diameter of 0.008 to 0.020 μm ; and an aspect ratio (average major axis diameter/average minor axis diameter) of 3:1 to 8:1.

4. (Original) Spindle-shaped magnetic alloy particles containing Fe and Co as main components according to claim 1, which further have a rotational hysteresis integral value (R_{h}) of not more than 1.0.

5. (Original) Spindle-shaped magnetic alloy particles containing Fe and Co as main components according to claim 1, which further have a saturation magnetization value of 100 to 150 Am²/kg; and a rotational hysteresis integral value (Rh) of not more than 1.0.

6. (Currently Amended) Spindle-shaped magnetic alloy particles containing Fe and Co as main components according to claim 1, which further have a BET specific surface area value of 40 to 75 m²/g; and a squareness (or/os) of 0.52 to 0.55.

7. (Original) A magnetic recording medium comprising a non-magnetic substrate, and a magnetic layer formed on the non-magnetic substrate, which comprises the spindle-shaped magnetic alloy particles containing Fe and Co as main components as defined in claim 1, and a binder resin.

8. (Original) A magnetic recording medium according to claim 7 which has a coercive force value Hc of 159.2 to 238.7 kA/m (2,000 to 3,000 Oe); a squareness (Br/Bm) of not less than 0.82; an orientation degree of not less than 2.0; an oxidation stability (ΔBm) of less than 8%; and a surface roughness Ra of not more than 8 nm.

9. (Currently Amended) Spindle-shaped magnetic alloy particles containing Fe and Co as main components, having a cobalt content of 20 to 45 atm%, calculated as Co, based on whole Fe; an average major axis diameter (L) of 0.03 to 0.08 μm; an average minor axis diameter of 0.008 to 0.020 μm; an aspect ratio (average major axis diameter/average minor axis diameter) of 3:1 to 8:1; a coercive force value of 159.2 to

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238.7 kA/m (2,000 to 3,000 Oe); a crystallite size of 110 to 160 Å; and an activation volume (V_{act}) of 0.01 to 0.07E-4 μm^3 ; and a squareness (σ_r/σ_s) of 0.52 to 0.55.

10. (Currently Amended) Spindle-shaped magnetic alloy particles containing Fe and Co as main components, having a cobalt content of 20 to 50 atm%, calculated as Co, based on whole Fe; an average major axis diameter (L) of 0.03 to 0.10 μm ; an average minor axis diameter of 0.008 to 0.020 μm ; an aspect ratio (average major axis diameter/average minor axis diameter) of 3:1 to 8:1; a coercive force value of 159.2 to 238.7 kA/m (2,000 to 3,000 Oe); a crystallite size of 100 to 160 Å; an activation volume (V_{act}) of 0.01 to 0.07E-4 μm^3 ; and a rotational hysteresis integral value (Rh) of not more than 1.0; and a squareness (σ_r/σ_s) of 0.52 to 0.55.

11. (Currently Amended) Spindle-shaped magnetic alloy particles containing Fe and Co as main components, having a cobalt content of 20 to 50 atm%, calculated as Co, based on whole Fe; an average major axis diameter (L) of 0.03 to 0.10 μm ; an average minor axis diameter of 0.008 to 0.020 μm ; an aspect ratio (average major axis diameter/average minor axis diameter) of 3:1 to 8:1; a coercive force value of 159.2 to 238.7 kA/m (2,000 to 3,000 Oe); a saturation magnetization value of 100 to 150 Am²/kg; a crystallite size of 100 to 160 Å; an activation volume (V_{act}) of 0.01 to 0.07E-4 μm^3 ; and a rotational hysteresis integral value (Rh) of not more than 1.0; and a squareness (σ_r/σ_s) of 0.52 to 0.55.

12. (Original) A magnetic recording medium comprising a non-magnetic substrate, and a magnetic layer formed on the non-magnetic substrate which comprises

the spindle-shaped magnetic alloy particles containing Fe and Co as main components as defined in claim 1, said magnetic recording medium having a coercive force H_c of 159.2 to 238.7 kA/m (2,000 to 3,000 Oe); a squareness (Br/B_m) of not less than 0.82; an orientation degree of not less than 2.0; an oxidation stability ΔB_m of less than 8%; and a surface roughness R_a of not more than 8 nm.

13. (Currently Amended) A magnetic recording medium comprising a non-magnetic substrate, and a magnetic layer formed on the non-magnetic substrate which comprises a binder resin and spindle-shaped magnetic alloy particles containing Fe and Co as main components as defined in claim 1 which have a cobalt content of 20 to 50 atm%, calculated as Co, based on whole Fe; an average major axis diameter (L) of 0.03 to 0.08 μm ; an average minor axis diameter of 0.008 to 0.020 μm ; an aspect ratio (average major axis diameter/average minor axis diameter) of 3:1 to 8:1; a coercive force value of 159.2 to 238.7 kA/m (2,000 to 3,000 Oe); a crystallite size of 110 to 160 \AA ; an activation volume (V_{act}) of 0.01 to 0.07E-4 μm^3 ; and a squareness (Br/B_m) of 0.52 to 0.55, said magnetic recording medium having a coercive force H_c of 159.2 to 238.7 kA/m (2,000 to 3,000 Oe); a squareness (Br/B_m) of not less than 0.82; an orientation degree of not less than 2.0; an oxidation stability ΔB_m of less than 8%; and a surface roughness R_a of not more than 8 nm.

14. (New) Spindle-shaped magnetic alloy particles containing Fe and Co as main components, having a cobalt content of 20 to 50 atm%, calculated as Co, based on whole Fe; an average major axis diameter (L) of 0.03 to 0.10 μm ; a coercive force value of

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159.2 to 238.7 kA/m (2,000 to 3,000 Oe); a crystallite size of 100 to 160 Å; an activation volume (V_{act}) of 0.01 to 0.07E-4 μm^3 ; and a rotational hysteresis integral value (Rh) of not more than 1.0.

15. (New) Spindle-shaped magnetic alloy particles containing Fe and Co as main components, having a cobalt content of 20 to 45 atm%, calculated as Co, based on whole Fe; an average major axis diameter (L) of 0.03 to 0.08 μm ; an average minor axis diameter of 0.008 to 0.020 μm ; an aspect ratio (average major axis diameter/average minor axis diameter) of 3:1 to 8:1; a coercive force value of 159.2 to 238.7 kA/m (2,000 to 3,000 Oe); a crystallite size of 110 to 160 Å; and an activation volume (V_{act}) of 0.01 to 0.07E-4 μm^3 ; and a rotational hysteresis integral value (Rh) of not more than 1.0.